



# Equipped To Survive<sup>TM</sup> Foundation

**[www.equipped.org](http://www.equipped.org)**

**Saving Lives Through  
Independent Testing, Education &  
Consumer Advocacy**

# Equipped To Survive™

- ❖ **“Consumer Reports” for Survival Equipment – Aviation, Marine and Wilderness**
- ❖ **Groundbreaking Testing and Evaluation of 406 MHz Distress Beacons resulting in significant upgrades to Int'l COSPAS-SARSAT and U.S. Standards**
- ❖ **Commendation (2004) from National Boating Safety Advisory Council**
- ❖ **PLB Testing USCG**

# Doug Ritter

- ❖ **Founder (1994) & Editor Equipped To Survive, Chairman ETS Foundation**
- ❖ **Award Winning Aviation & Marine Journalist**
- ❖ **Survival SME: USCG & Army Aviation**
- ❖ **Former CAP Officer & Pilot**
- ❖ **Only Consumer Advocate Voting Member:**
  - ❖ **SAE Aerospace Council, Aircraft Div. S9 Cabin Safety Committee & S9A - Safety Equipment and Survival Systems Sub-committee**
  - ❖ **RTCM Special Committees SC110, SC119, SC128 (EPIRBs, PLBs, MOBs, SENDs)**

# Doug Ritter

- ❖ **Early and Vocal Supporter of 406 MHz PLBs**
- ❖ **“ELT is Backup to PLB”**
- ❖ **I have been personally responsible for the sale of THOUSANDS of 406 MHz PLBs most with GPS, as well as 406 MHz ELTs**
- ❖ **I carry a PLB myself**
- ❖ **I was an early critic of the first SPOT and have since provided input to both Globalstar/SPOT and Delorme/inReach**

# SAR's Traditional Frame of Reference



**SAR's Traditional  
Frame of Reference  
That Others May Live**

**SAR's Non-Traditional  
Frame of Reality**

**“R” in SAR also means Recovery**

**...Both at Lowest Cost & Risk...**

**...by Removing “Search” from SAR**

# What Price Your Life?

- ❖ **Given: Congressional ELT Mandate has led us to this point in time**
- ❖ **However: Mandate only required ELTs, it did NOT require Proof of Efficacy or Specify Effective Scientific Data Collection**
- ❖ **Data collection via accident forms is haphazard, not well structured and therefore not scientifically reliable in terms of efficacy determination**
- ❖ **We need to do Better at Data Collection!**

# What Price Your Life?

- ❖ **Decisions about Alerting Devices and Features are made based on:**
  - ❖ **Flawed Data re Efficacy and Cost**
  - ❖ **Relatively Few Technically Complete (WRT to ELT) Accident Investigations**
  - ❖ **Frustration with the Status Quo**
  - ❖ **Our Gut which says "we must do better!"**



# What Do We Know?

- ❖ Anecdotal and Factually: ELTs can Save Lives and Reduce SAR Cost and Risk
- ❖ 121.5 MHz ELTs are Anachronisms that have Outlived Their Usefulness as Alerting Devices
- ❖ Anyone who says otherwise is:
  - ❖ Not Listening
  - ❖ Exhibiting Cognitive Dissonance
  - ❖ Won't Happen to ME

# What Do We Know?

- ❖ 406 MHz ELTs Provide Significant Advantages over 121.5 MHz ELTs
- ❖ 406 MHz + GPS Provides Significant Additional Advantages (Note: GPS Location Degraded)
- ❖ As much as 100 meters

# What Do We Know?

- ❖ The Combination of Doppler Location and 121.5 and/or 406 Homing in current ELTs and PLBs also provides Effective Back-up
- ❖ 406 MHz ELTs are NOT "NEW" Technology
- ❖ Would be considered anachronisms in any other technologically advanced industry

# What Do We Know?

- ❖ **COSPAS-SARSAT, because it is an International Organization that is inherently inefficient and generally slow to act, may well be, in my opinion, heading towards Irrelevancy except for Mandated Carriage**
- ❖ **2nd Generation is not guaranteed to happen or at least not on-time or with promised performance improvements**

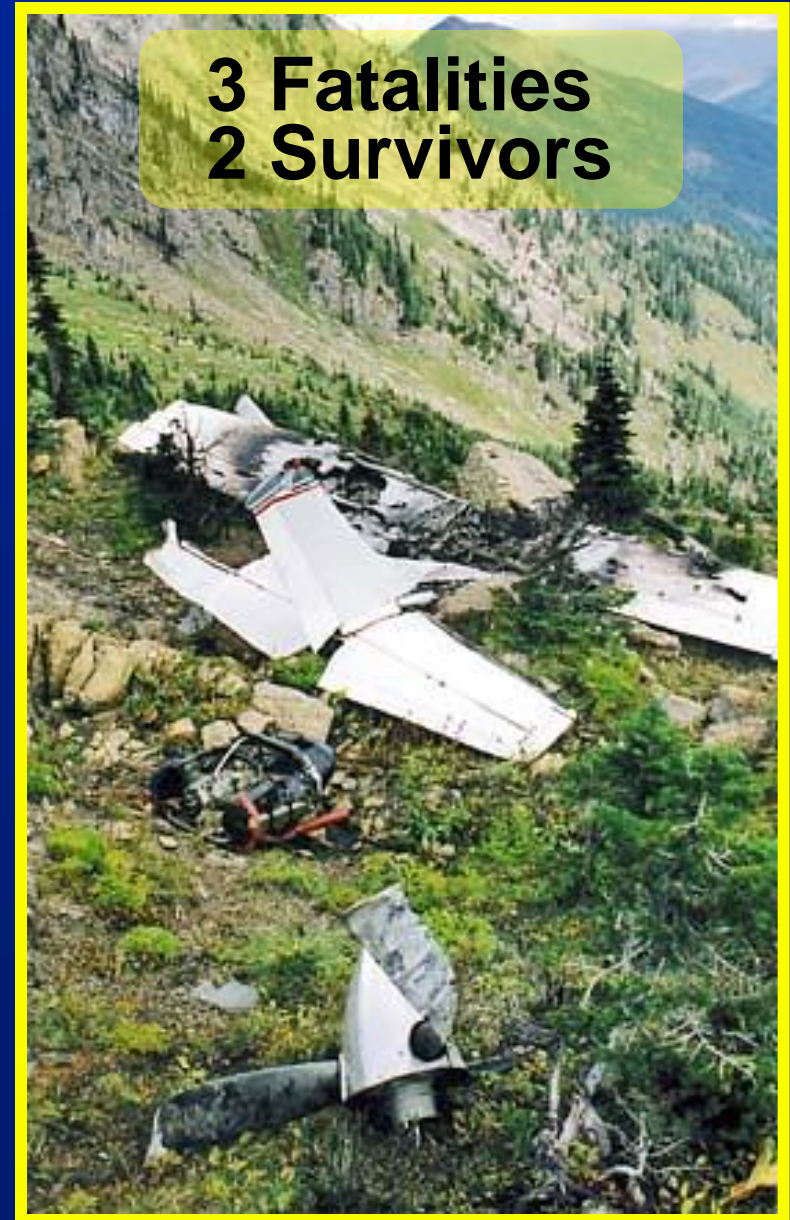
# What Should We Understand?

- ❖ ELTs are Mandated Carriage
  - ❖ An ELT is a "One Trick Pony"
  - ❖ Therefore: ELTs are viewed as "TAX" by Aircraft Owners and Operators
  - ❖ Lowest Cost is key
    - ❖ Results in Minimum Specification Fitment

# What Do / Don't We Know?

- ❖ ELTs DON'T Work All the Time for a variety of reasons
- ❖ Reasons why are not reliably captured in the data available on typical accident forms

Expecting an ELT  
to work every time  
**AFTER** a crash is  
**Unrealistic**

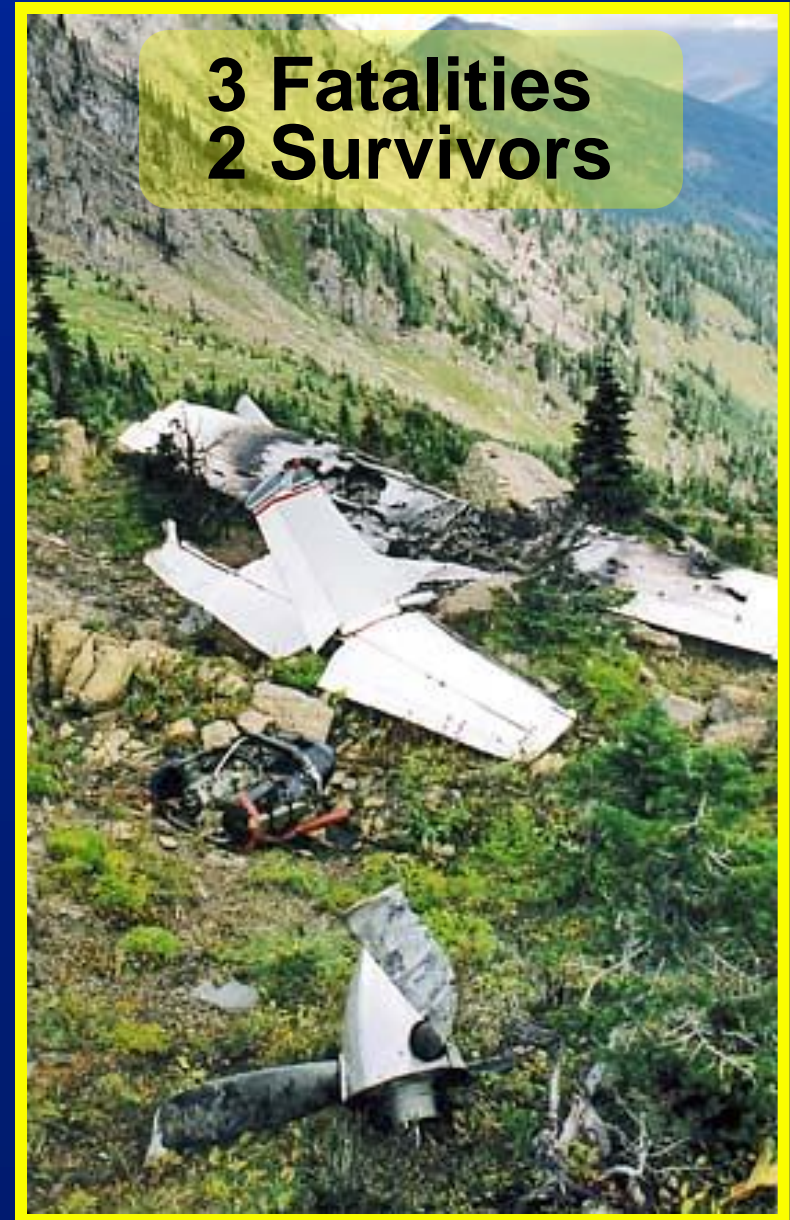




# What Do / Don't We Know?

- ❖ **ELTs DON'T Work Every Time for a variety of reasons**
- ❖ **Reasons why are not reliably captured in the data available on typical accident forms**

**An "ELT" (in the traditional sense) may NOT be the Best Solution**



# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED





# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED

**When Your Only Tool  
is a Hammer, Every  
Problem Looks Like a  
Nail!**

# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED

If you are a Federal  
Authority, then your  
Hammer is a  
**PRESCRIPTIVE**  
Regulatory  
Mandate

# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED

If you are a Federal  
Authority, then your  
Hammer is a  
Mandated 406 MHz  
ELT

# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED

If you are a Federal  
Authority, then your  
Hammer is an Old  
Fashioned  
Anachronism that is  
only BETTER than  
What we Have

# Where Do We Go Now?

- ❖ Because ELT is a Mandate we have allowed ourselves to be TRAPPED

If you are a Federal  
Authority, then your  
Hammer is an Old  
Fashioned  
Anachronism that  
MAY NOT be the  
BEST we can  
OFFER

# **Noted Problem Solver**

## **Albert Einstein**

**“We can't solve problems by using the same kind of thinking we used when we created them.”**

**“Insanity: doing the same thing over and over again and expecting different results.”**

# A Better Idea?



# Paradigm Shift!

# Paradigm Shift!

- ❖ Define the Objective
  - ❖ NOT the Solution
- ❖ Get Out of the [expletive deleted] Way!
  - ❖ More Innovation
  - ❖ "Value Added"
  - ❖ Customer Choice
  - ❖ Better Results!



# Paradigm Shift!

- ❖ **COSPAS-SARSAT is NOT the Only Answer**
- ❖ **Alternatives are Specifically Allowed**
- ❖ **Problem: No Clear Means of Satisfying the “Secretary” (FAA) that an Alternative provides an Equivalent Level of Safety**
- ❖ **That Dissuades Anyone from Trying**
- ❖ **Performance Based Criteria**
  - ❖ **That are NOT Designed to Sabotage the Opportunity**

# Paradigm Shift!

- ❖ **COSPAS-SARSAT is NOT the Only Answer**
- ❖ **Realtime Satellite Tracking (RST)**
  - ❖ **Iridium**
    - ❖ **Spidertracks (as an example)**
  - ❖ **Globalstar**
  - ❖ **New Satellites**
- ❖ **Satellite ADS-B >> AIS (Maritime Automatic Identification System - currently in trials)**

# Paradigm Shift!

- ❖ **COSPAS-SARSAT is NOT the Only Answer**
- ❖ **PLBs and SENDs**
- ❖ **Cost / Benefit Analysis**
  - ❖ **If PLBs / SENDs were Acceptable Alternative to ELT...**
  - ❖ **Would Lives Saved and SAR Costs Saved outweigh Cost of INEVITABLE ELT Failures and Fatal Crashes?**
  - ❖ **What if PLB/SEND Included a G-Switch and/or Remote Antenna?**

# Paradigm Shift!

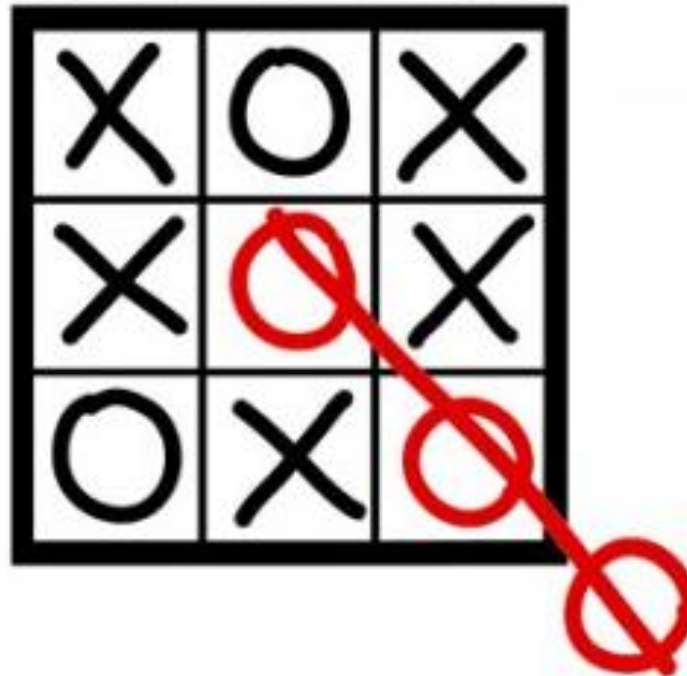
❖ Needed:

❖ More and Better Data Collection

❖ Objective / Performance Based  
Requirement to Open the  
System to Innovation



# THINK OUTSIDE THE BOX





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